

## Drought Update 12/8/2011

A strong cold front raced across NC on Wednesday, 12/7, accompanied by a line of showers and storms along with wind gusts from 40 to 50-plus mph. This was the first rainfall of the month (Fig 1) for much of central and eastern NC. So, while all of central NC has now received rainfall during the first week of December, significant amounts ( $>0.50$  inches) favor the west and north...while much of the south and east have received less than a quarter of an inch (Fig 2). The monthly normal for December is  $\sim 0.75$  inches per week.

**1-Day Observed Precipitation**  
**Valid at 12/8/2011 1200 UTC-TC**

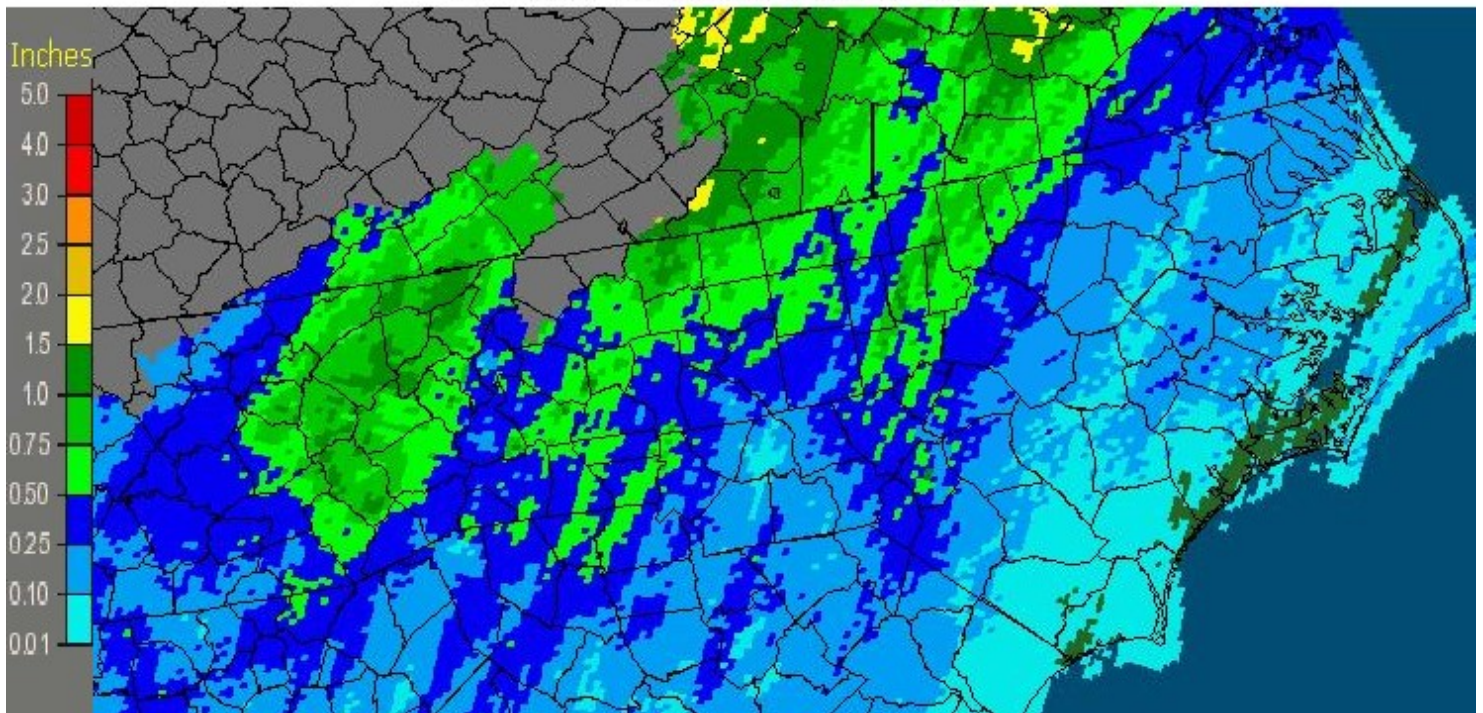


Fig 1—24 hour rainfall ending at 7 AM EST, 12/8/2011

**Current 7-Day Observed Precipitation**  
**12/8/2011**

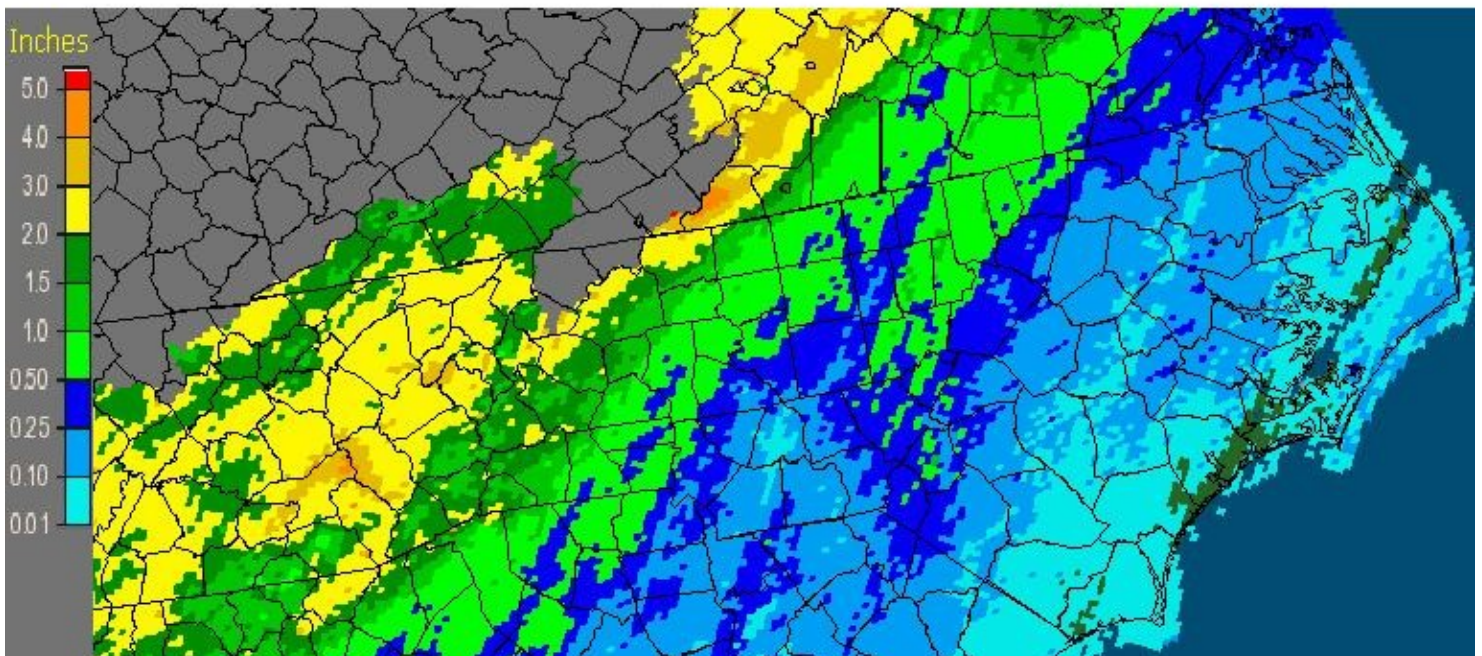


Fig 2—7 day rainfall ending at 7 AM EST, 12/8/2011

Runoff during the cool season runoff is much higher as vegetation is dormant and evaporation is greatly reduced. As such, streams and rivers show faster and higher rises in response to rain in December than we would expect from a similar rainfall event during August. Only a few streams continue to exhibit flows that are below normal (Fig 3),

## Map of real-time streamflow compared to historical streamflow for the day of the year

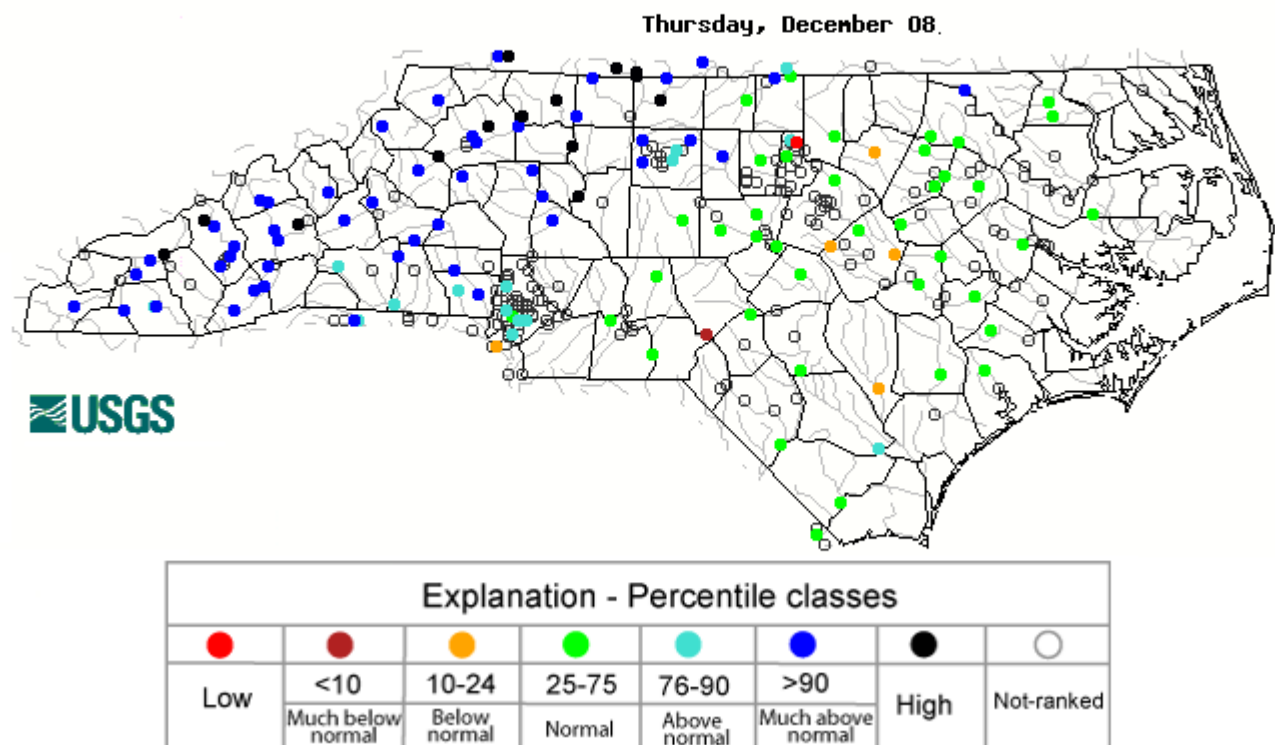


Fig 3—Streamflows compared to historical flows for 12/8/2011—7 AM EST

Many drought impacts, such as streamflows and soil moisture, have been easing across much of the state throughout the fall, but there are still lingering indications of drought, especially in eastern NC. Probably most noticeable is the rainfall deficit for longer durations, i.e. 30 day percent of normal (Fig 4). In Fig 4, we see that rainfall is less than 50 percent of normal over most of central NC, especially east of Interstate 95. Recall, however, that hurricane Irene's deluge of 6+ inches of rain caused flooding over a good portion of that area, so the deficit is actually lower in that area as we look beyond to 90 days (Fig 5) and beyond.

30-Day Percent of Normal Precipitation  
12/8/2011 1200 UTC

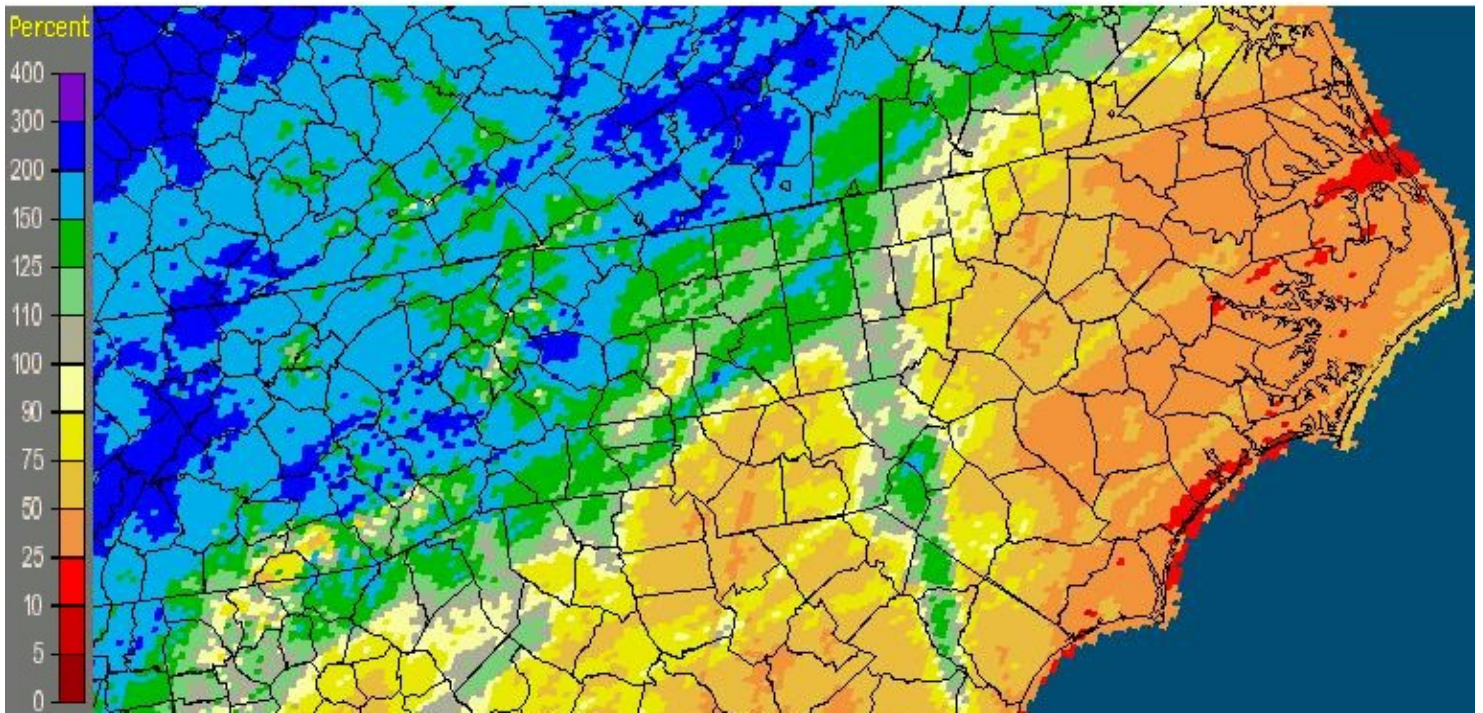


Fig 4— 30 day percent of normal rainfall

Current 180-Day Percent of Normal Precipitation  
12/8/2011 1200 UTC-

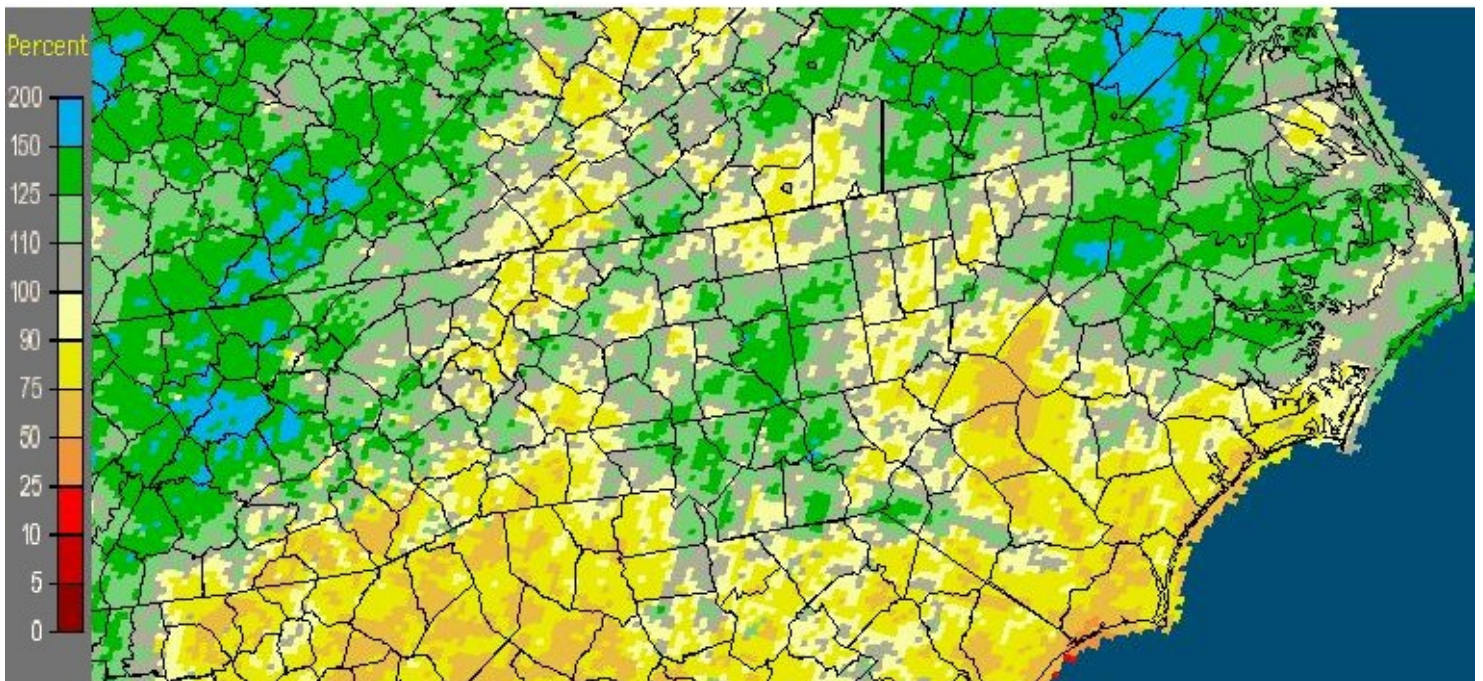


Fig 5— 90 day percent of normal rainfall

Falls Lake, which is the water supply reservoir for Raleigh, has not received as much rain as areas west and east of the watershed, and remains about 4 feet below full pool, and a little over a foot below the level at this point last year (Fig 8).

The lake is in the upper Neuse watershed and drains a relatively small area (Fig 6). There are also two reservoirs upstream of the lake which are ungated, meaning that until they are full, no water flows downstream into Falls (Fig 7).

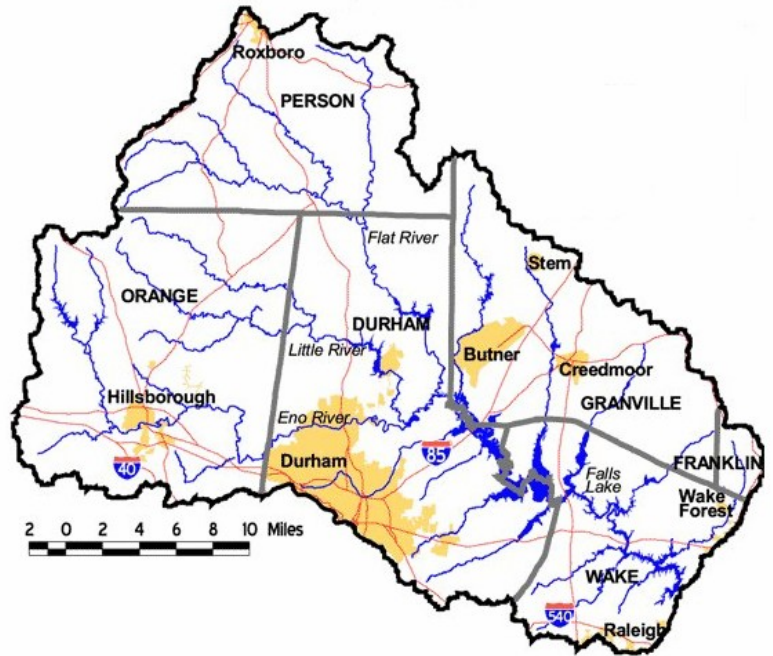


Fig 6—Upper Neuse watershed

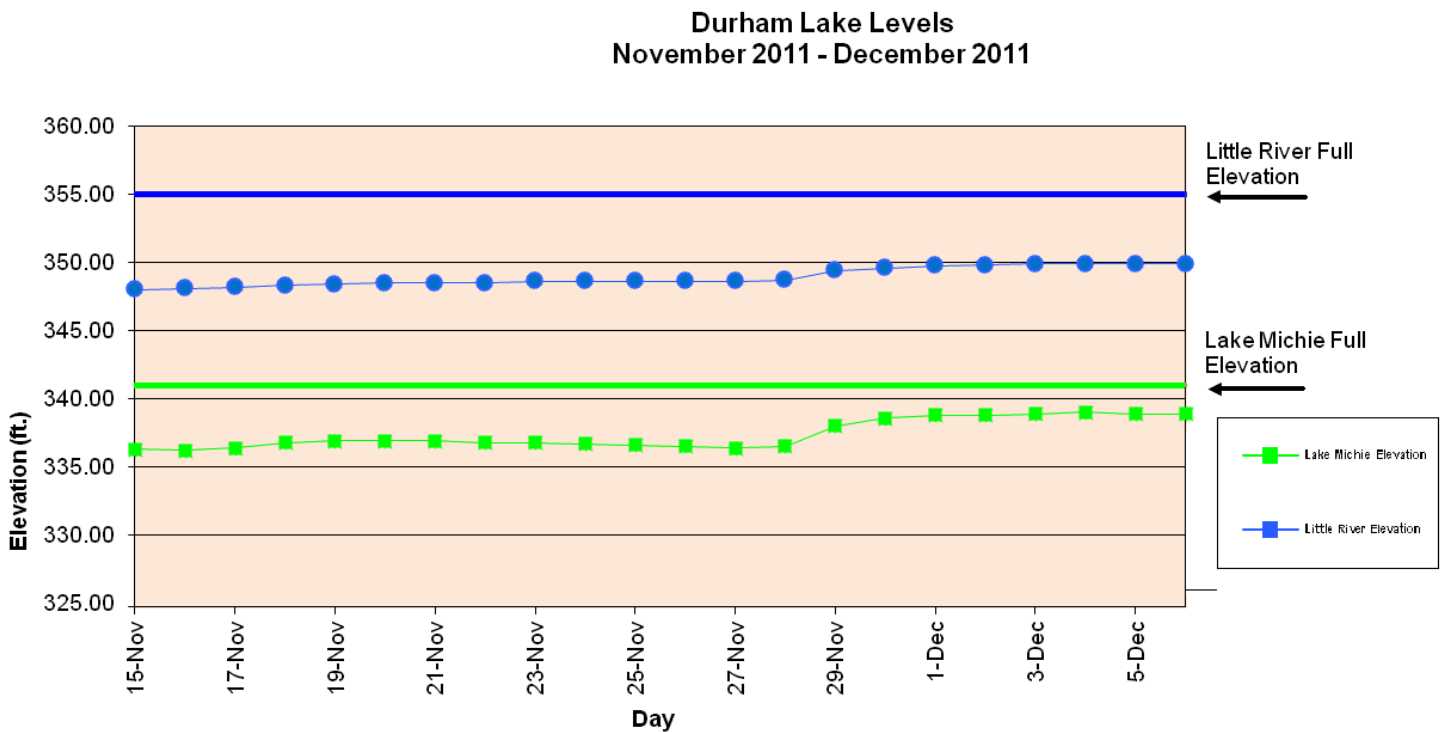


Fig 7—Durham Lake Levels—Little River Reservoir and Lake Michie water levels

Falls Lake Level - 6 Dec 2011

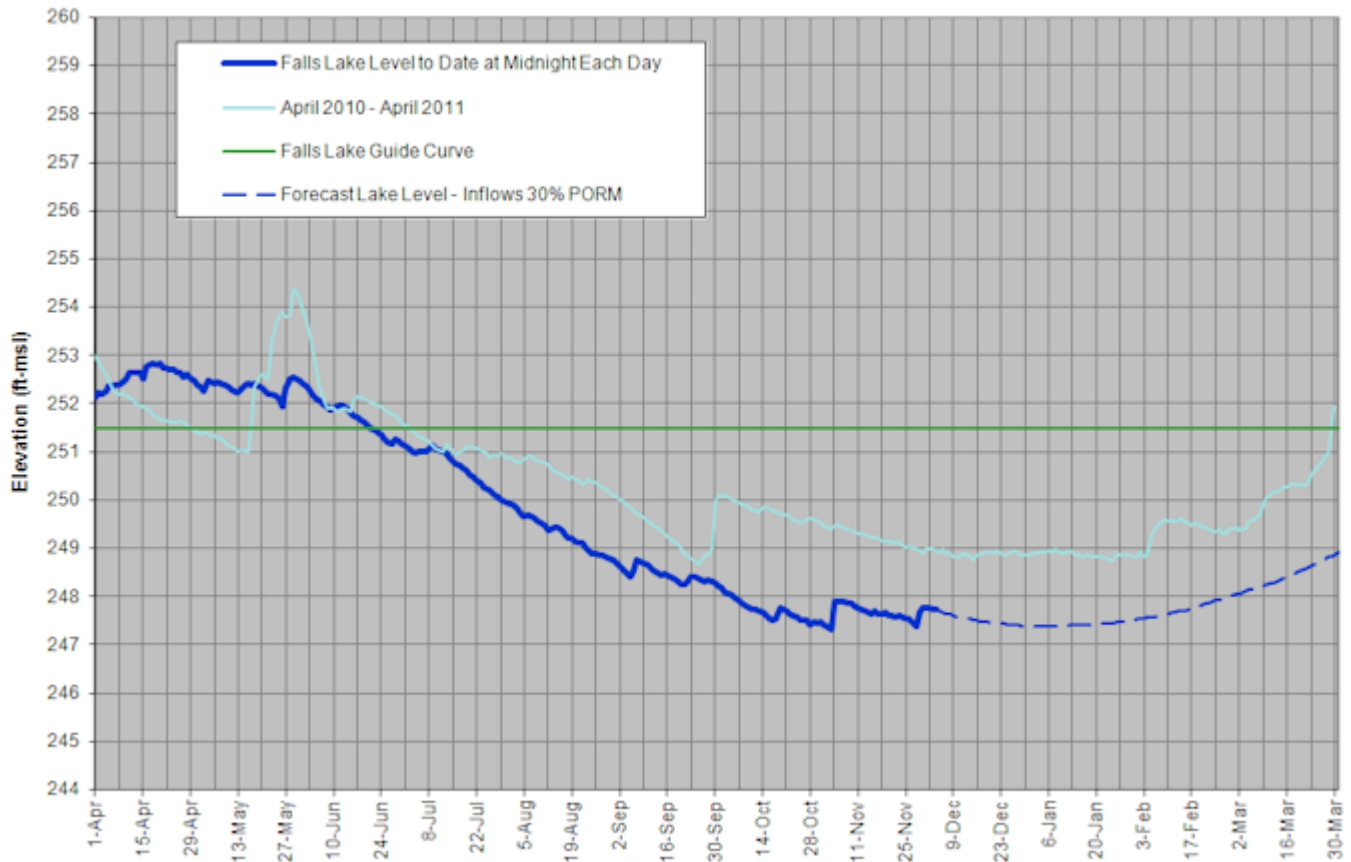


Fig 8—Falls Lake Level and Forecast

The growing rainfall deficit in eastern NC caused the [U.S. Drought Monitor](#) to upgrade a portion of southeastern NC to D0 (abnormally dry) this week (Fig 9). This is not an alarming downgrade, but more of a 'we're watching this area' designation. Meanwhile, no changes were introduced elsewhere as the rainfall received the past week was judged to have been sufficient to maintain current drought conditions.

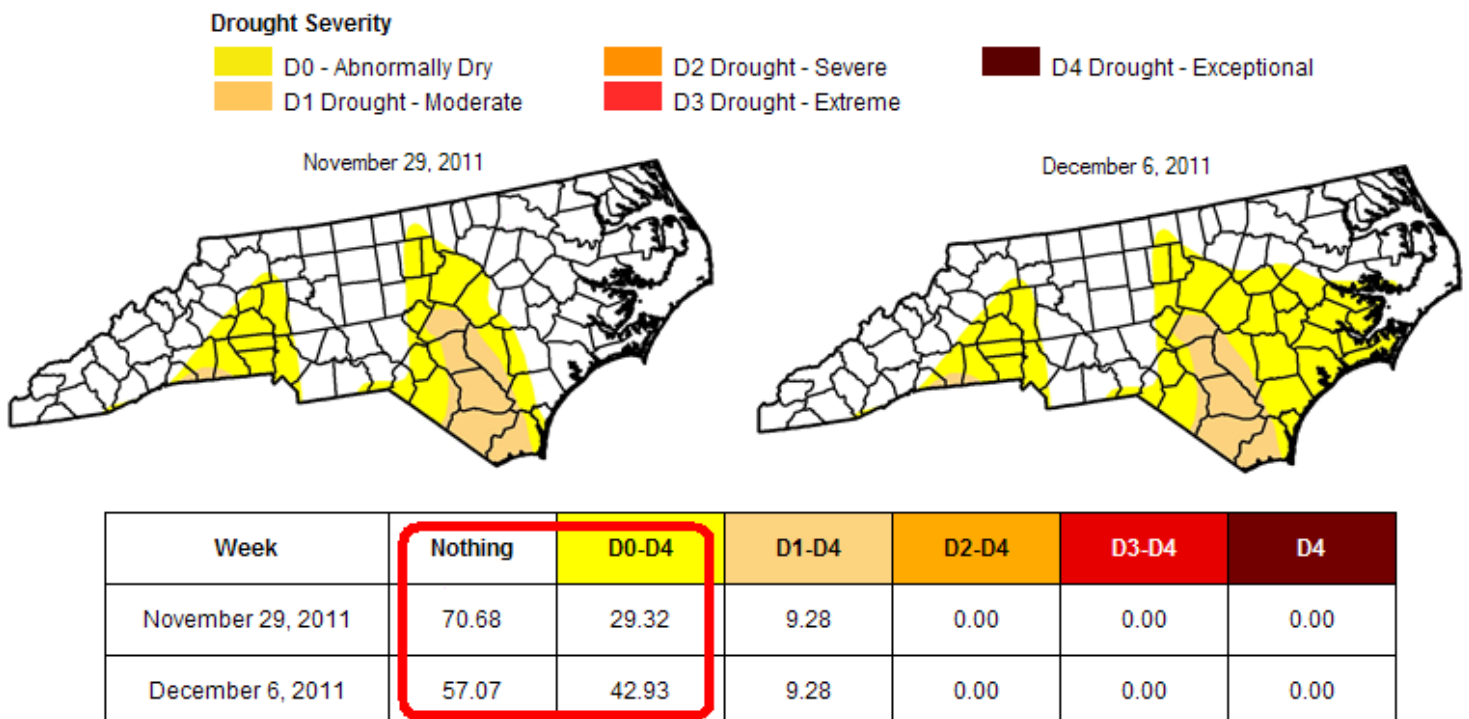


Fig 9—Drought Conditions over NC—US Drought Monitor